MANAGEMENT TRAITS OF THE PROJECTS CONCERNING POWER GENERATION AND WASTE RECOVERY

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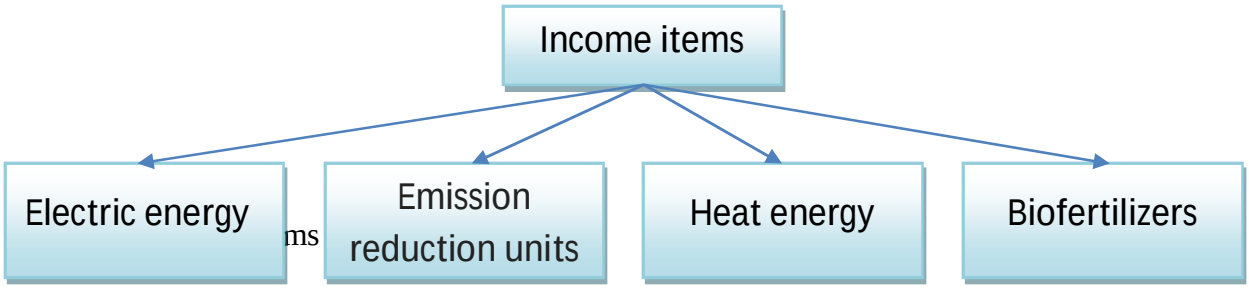
Abstract

Nowadays a large number of motivations and a growing interest exist for the development of renewable sources of energy, like energy systems based on biomass. Organic waste recovery as a component of the environmental protection is widely recognized to be a preemptive trend in the innovation development all over the world.

The aerobic and aerobic-anaerobic fermentation of the organic feedstock including those based on modern nano-biotechnologies are considered currently as prospective technologies that permit to exclude the using of conventional lagoon and to reduce significantly the emission of the greenhouse gases (carbon dioxide, methane etc.). These technologies are realized in a form of the integrated bioenergy complexes (IBCs). So, the principal advantages of IBCs are the total waste recovery, production of biogas, biofertilizers and fuel palettes and low amount of the greenhouse gases.

The integrated bioenergy complex for organic waste recovering, through the production of several different co-products (Fig.1), provides the profitability of the enterprise activity.



Summarizing the scheme presented at Fig.1 it should be noted:

1. The enterprise could cover 40 to 160% of energy needs due to the produced electric energy. So, it is possible to get benefits in term of "feed-in tariff".

2. The proceeds from the AAU sales should be "greened", i.e. channeled to the development and implementation of the projects either acquiring the greenhouse gases emission reductions (hard greening) or building up the necessary framework for this process (soft greening).

3. Heat energy is consumed in the fermentation process and for after heating the business premises.

4. Biofertilizer as a final product of the integrated bioenergy complex operation could totally substitute the mineral fertilizers since it contains an optimal combination of the macro- and microelements and also the plant growth stimulants.

The engagement of the project management technologies in the fulfillment of the innovation projects in the field of power generation and waste recovery is now recognized to be of great significance. Here, peculiar work and organization breakdown systems (WBS and OBS) are required, since a number of different specialists (building experts, field and power engineers,

environmentalists, etc.) should be mobilized for the project realization being successful. Besides, the seasonal aspects that influence technological conditions of the biofertilizer operation should be also taken into account in order to reduce of the heating expenses at the initial stage providing the maximal vital activity of methane-oxidizing bacteria.

Here, the project of the biofertilizer construction at the chemicals plant is considered. The appropriate WBS structure and the algorithm of its strategic evaluation have been proposed.

Selected characteristics of the considered project are presented below.

Raw materials – household and industrial waste water, ensilage rush.

Technology – aerobic-anaerobic fermentation.

Operation mode – thermophile (55^{o} C).

The tentative economic indexes f the project on the power generation and waste recovery are presented in Table.

The data of strategic evaluation permit to select the relevant technology, to define the risk assessment and resource requirements in accordance with business and operational plans and to compose network diagrams and Gantt chart of the project.